

## REMARKS

### *Introduction*

Claims 1-14 and 17-32 are pending in the present application, claims 15 and 16 having been canceled without prejudice or disclaimer.

Independent claims 1, 24, 28, and 29 have been amended to expressly recite the mica feature of claim 15, now canceled. Conforming and other minor amendments, e.g., to improve antecedent basis, have been made to the dependent claims. In this regard, claim 16 has been canceled because its antecedent basis has been removed from claim 1 due to the above amendments. Neither the amendments to claim 1 nor the cancellation of claim 16 requires nor precludes the inclusion of organic fibrous additive in the claimed door skin structure. Applicant has amended the dependency of claim 27 for the purpose of providing proper antecedent basis for the term “thermoforming”. Applicant has also added new claims 30-32, which are supported in the original disclosure at page 9, lines 1-8. Applicant respectfully requests approval and entry of the above claim amendments and new claims.

Claims 24-29 have been withdrawn from consideration by the Examiner. Though withdrawn, Applicant has amended non-elected claims 24, 28, and 29 to make them consistent with amended claim 1, from which they each depend. As set forth in MPEP § 806.05(f), upon allowance of claims 1-14 and 17-23, the “withdrawn process claims that depend from or otherwise require all of the limitations of the allowable product claims will be considered for rejoinder.” Accordingly, Applicant respectfully submits that rejoinder of claims 24-29 is proper upon allowance of claim 1.

### ***Specification***

Applicant has amended the specification above to correct the basis of the priority claim's reference to the provisional application. Applicant respectfully requests approval and entry of the above amendment to the specification.

### ***Claim Rejections – 35 U.S.C. § 102***

Claims 1-4, 7-13, 16, 22, and 23 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 2002/0091218 to Ford.

As noted above, claim 1 has been amended to recite features of claim 15 (now canceled), which was not subject to this anticipation rejection. Applicant respectfully submits that Ford does not disclose the features of original claim 15 or amended claim 1, and therefore cannot anticipate either. Applicant respectfully submits that the Examiner implicitly acknowledges as much by excluding claim 15 from this anticipation rejection. Accordingly, Applicant respectfully submits that claim 1 as amended is not anticipated by Ford.

Claims 2-4, 7-13, 16, 22, and 23 depend from claim 1, and incorporate all of its distinguishing features, including those features that were previously recited in claim 15 and are now expressly recited in amended claim 1. By virtue of their dependency from claim 1, and because certain features of these dependent claims are not disclosed in the applied art, Applicant respectfully submits that claims 2-4, 7-13, 16, 22, and 23 are not anticipated by Ford.

For the above reasons, Applicant respectfully requests withdrawal of the Section 102(b) rejection of claims 1-4, 7-13, 22, and 23. Applicant respectfully submits that the rejection of claim 16 has been rendered moot by its cancellation.

***Claim Rejections – 35 U.S.C. § 103***

Claims 14 and 15 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ford in view of U.S. Patent No. 5,919,554 to Watterson.

As recited in amended claim 1, from which claim 14 depends (and claim 15 previously depended prior to its cancellation), the claimed composite door skin structure comprises about 40-80 wt% thermoplastic polymer, up to about 30 wt% randomly oriented glass fibers, and not less than about 5 wt% mica.

Thermosetting materials had conventionally been used to make door skins. After setting, thermosetting compositions cannot be reformed to correct flaws. The flawed materials cannot be reused or reprocessed, and therefore are disposed of, typically in landfills. (Specification, page 3, lines 8-12)

Efforts had been made to replace the thermosetting materials conventionally used in door skin manufacturing with thermoplastic materials to reduce thermoset waste. (See page 3, lines 21-22) Ford represents one such effort. However, Ford and others have been unsuccessful in their efforts to effectively reduce a commercially viable thermoplastic door skin to practice for a variety of reasons. See Declaration of Jim Pfau under 37 C.F.R. § 1.132 (hereinafter “Pfau Declaration”), ¶ 4, filed concurrently herewith.

As with Applicant, Ford discloses combining its polypropylene with glass fiber filler. The glass fibers reduce the coefficient of thermal expansion of thermoplastic door

skins, reducing their distortion under several temperature conditions such as experienced in certain environments. (Specification, page 3, line 22 to page 4, line 5) However, the glass fibers used by Applicant and Ford also cause the thermoplastic material to warp during processing, producing a door skin with unacceptable waviness. Pfau Declaration, ¶ 5.

The present inventors, in attempting to reproduce the work of Ford, prepared separate door skins with talc, calcium carbonate, or wood fiber, per the teachings of Ford at paragraph 0035. The inventors found that the door skins consistently exhibited waviness, irrespective of the additive included. Pfau Declaration, ¶ 6.

Despite the failure of Ford to enable the production of a commercially acceptable door skin product, the inventors persisted in their efforts to develop a thermoplastic door skin. One of these efforts involved the addition of mica to the thermoplastic composition. Surprisingly, it was discovered that the combination of glass fibers and mica produced a door skin with lower coefficient of thermal expansion and warp. Consequently, the inventors were able to transform the deficient door skin of Ford into a more viable product. Pfau Declaration, ¶ 7.

As acknowledged by the Examiner, Ford does not disclose the use of mica in its door skin formulation. To address the deficiency of Ford, the Examiner has cited to the Watterson patent. Watterson is based on thermoset polyesters, not thermoplastics such as polypropylene and other polyolefins such covered by the present claims. In thermosets such as those of Watterson, mica is mostly used as a filler to reduce cost and generally is not needed or used to reduce warping of the thermoset.

Applicant respectfully submits that a person of ordinary skill in the art would not have selected mica to address the warping problems that plague the Ford door skin. None of Fords' fillers (talc, calcium carbonate, or cellulose) resolved this problem. Given the perceived equivalence of mica to these fillers, as evident from the Examiner's own rejection, the artisan of ordinary skill would have had no more expected mica to resolve the warping problems that talc, calcium carbonate and cellulose failed to correct. Pfau Declaration, ¶ 8. Absent a reasonable expectation of success, the claimed invention cannot be obvious.

Additionally, as set forth in paragraph 9 of the accompanying Pfau Declaration, comparative experimental testing was conducted between an inventive thermoplastic formulation containing mica and the Ford formulation. Among these tests, an inventive formulation containing polypropylene, 10 wt% glass and 20 wt% mica was prepared and compared to the preferred formulation of Ford containing polypropylene, 15 wt% glass, and 15 wt% talc. Testing showed that the inventive formulation showed an improved coefficient of thermal expansion of  $38 \times 10^{-6} / ^\circ\text{C}$  compared to  $90 \times 10^{-6} / ^\circ\text{C}$  of Ford. The inventive formulation also showed less than half the warp, i.e., 0.5 inch warp for the inventive formulation compared to a 1.1 inch warp for Ford's formulation. The testing thus demonstrates that the claimed invention possesses unexpected superior results over those of Ford.

For these reasons, Applicant respectfully submits that the claims are patentable over the combination of Ford and Watterson, and respectfully requests withdrawal of the rejection.

Claims 5 and 6 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ford in view of U.S. Patent No. 6,209,172 to Bradley.

Applicant respectfully traverses this rejection. Claims 5 and 6 depend from claim 1 and incorporate its distinguishing features. As explained above in reference to claim 1, Ford fails to teach the use of mica. Bradley, which has been cited for its disclosure of reinforcing ribs, does not overcome the deficiencies of Ford. Further, Bradley's meter box doors would presumably have a sufficiently small surface area so as make warping a non-concern.

For these reasons, Applicant respectfully requests reconsideration and withdrawal of the Section 103(a) rejection of claims 5 and 6.

Claims 17-21 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ford in view of U.S. Patent No. 6,313,184 to Sasaki et al.

Applicant respectfully traverses this rejection. Claims 17-21 depend from claim 1 and incorporate its distinguishing features. As explained above in reference to claim 1, Ford fails to teach the use of mica. Sasaki, which has been cited for its disclosure of "limitations on the polypropylene resin," does not overcome the deficiencies of Ford.

Additionally, the Examiner's rejection is based on the inherency doctrine:

while modified Ford et al. does not *explicitly* disclose the recited mechanical and thermal properties, one having ordinary skill in the art would expect the molded door panel of modified Ford et al. to exhibit these properties considering the substantially similar composition compared to the instant composition (i.e. resin type, fiber type, fiber length, filler type and relative amounts thereof).

Office Action, page 6 (emphasis added).

Reliance on the inherency doctrine requires the Patent Office to provide a basis in fact and/or technical reasoning reasonably supporting the determination that the allegedly

inherent characteristics necessarily flows from the teachings of the prior art. *Ex parte Levy*, 17 U.S.P.Q.2d 1461 (B.P.A.I. 1990). The fact that a prior art article may inherently have the characteristics of the claimed product is not sufficient. *Ex parte Skinner*, 2 U.S.P.Q.2d 1788 (B.P.A.I. 1986). Inherency must be a necessary result and not merely a possible result. *In re Oelrich*, 212 U.S.P.Q.2d 323 (CCPA 1981); *Ex parte Keiher*, 154 U.S.P.Q. 320 (P.O.B.A. 1966).

Inherency, for both anticipation and obviousness determinations, must be certain. The mere fact that a certain thing may result from a given set of circumstances is not sufficient to establish inherency. That which may be inherent is not necessarily known, and obviousness cannot be predicated on what is unknown. *In re Ritjckaert*, 9 F3d 1531, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). *See also Continental Can Co. v. Monsanto Co.*, 948 F2d 1264, 1268-1269, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991) (quoting *In re Oelrich*, 666 F2d 578, 581, 212 USQP 323, 326 (CCPA 1981)), and *Electro Medical Systems, S.A. v. Cooper Life Sciences, Inc.*, 34 F3d 1048, 32 USPQ2d 1017 (Fed. Cir. 1994).

Claims 17-21 set forth specific ranges of values for the melt flow index, coefficient of thermal expansion, stiffness, impact strength, and toughness of the claimed door skin. It does not necessarily follow that these properties would have been achieved by combining Ford and Sasaki. Despite some resemblance between the formulations, there are notable differences as well, including Sasaki's impregnation of its composition with a foaming agent for expanding the resin beads. The different properties of Ford and Sasaki are evident from the different uses of the respective products. While, as pointed out by the Examiner, both Ford and Sasaki mention door panels as potential uses for their respective compositions,

Ford states that its composition is ostensibly suited for a door skin, whereas Sasaki states that composition serves as an impact absorbent backing for a skin:

The molded article of the invention is not only usable as an *impact absorption material* such as an automotive bumper core material or the like, but also favorably used as automotive interior materials integrated *with a skin material* such as a dashboard, a console box, a console lid, an instrument panel, a door panel, a door trim, a ceiling material, an interior material for pillar portion, a sun visor, an arm rest, a head rest and the like.

Sasaki, column 10, lines 52-59 (emphasis added).

Applicant respectfully submits that a person of ordinary skill in the art attempting to design a door skin would have understood that absorbent backings such as disclosed in Sasaki do not have the properties and appearances desired of the actual door skin. While the formulations of Ford and Sasaki relate to different components of a door, a person of ordinary skill in the art would not have viewed the formulations as suitable alternatives for one another or as being interchangeable. Each component serves its own purpose and possesses its own characteristics distinct from the other.

For these reasons, Applicant respectfully requests reconsideration and withdrawal of the Section 103(a) rejection of claims 17-21.

Finally, Applicant notes that new claims 30-32 depend directly or indirectly from claim 1, and incorporate its distinguishing features as described above. It is respectfully submitted that claims 30-32 are patentable over the art for reasons discussed above.

### ***Conclusion***

It is respectfully submitted that a full and complete response has been made to the outstanding Office Action and, as such, there being no other objections or rejections, this application is in condition for allowance, and a notice to this effect is earnestly solicited.



If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided below.

If any further fees are required in connection with the filing of this amendment, please charge the same to out Deposit Account debit Account 50-0548.

Respectfully submitted,



Joseph W. Berenato, III  
Registration No. 30,546  
Attorney for Applicant

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Berenato, White & Stavish, LLC  
6550 Rock Spring Drive, Ste. 240  
Bethesda, Maryland 20817  
(301) 896-0600